

In the Claims:

Following is a complete listing of the claims pending in the application, as amended:

1. (Cancelled)

2. (Currently Amended) The transport unit according to claim 16, further comprising a second rotary actuator connected to said vertical member for rotating said vertical member and said arm member about the first vertical axis.

3. (Previously Presented) The transport unit according to claim 2, wherein said arm member includes a first section and a second section, said first section carried by said vertical member at a first end thereof, and said first section rotationally carrying said second section at a second end thereof, said second section carrying said end effector, and wherein said transport unit further includes a third rotary actuator connected to said first and second sections for rotating said second section with respect to said first section about a second vertical axis.

4. (Currently Amended) The transport unit according to claim 1-6 further comprising a lift actuator carried by said housing and connected to said vertical member to vertically move said vertical member with respect to said housing.

5. (Currently Amended) The transport unit according to claim 1-6 wherein said housing comprises a linear bearing configured to be coupled to a rail of an external guide system and an electromagnet for transporting said transport unit along the rail.

6. (Currently Amended) ~~The transport unit according to claim 1,~~ A transport unit for moving a microelectronic workpiece, comprising:
a housing having a guide member configured to move linearly along a linear track;

C₁

a vertical member extending from said housing, said vertical member being carried by said housing to move along a vertical path; and
an arm member extending from said vertical member, the arm member being carried by the vertical member to rotate about a first vertical axis, and the arm member having an end effector disposed for holding a workpiece and a first rotary actuator connected to said end effector for rotating said end effector about a vertical axis, and wherein said end effector includes a horizontally extending member having at least one protruding member arranged for pressing against an edge of a workpiece overlying said horizontally extending member, and a movable member, selectively movable to press the edge of the workpiece against the protruding member to grip said workpiece on said horizontally extending member.

7. (Original) The transport unit according to claim 6, wherein said horizontally extending member comprises a Y-shaped paddle and said at least one protruding body comprises two pins, each pin extending perpendicularly from one leg of said Y-shaped paddle.

8. (Original) The transport unit according to claim 6, wherein said movable member comprises a plunger arranged to press the edge of the workpiece, said plunger having a angled surface pressing said edge of said workpiece.

9. (Original) The transport unit according to claim 6 wherein said at least one protruding member comprises two spaced apart pins, and wherein said pins include radially extending flanges at end of said pins spaced from said horizontally extending member.

10. (Original) The transport unit according to claim 9 wherein said pins include an intermediate base portion having a surface which tapers toward a receiving surface of said horizontally extending member which is closest to said workpiece, such that said workpiece is supported on an edge thereof having its bottom surface spaced from a top surface of said receiving surface.

11. (Currently Amended) The transport unit according to claim 46, further comprising a workpiece presence sensor mounted to said effector, the sensor generating a signal corresponding to the presence of a workpiece on the effector.

12. (Original) The transport unit according to claim 11, wherein said effector comprises first and second upstanding portions which are arranged to press spaced apart locations on the edge of the workpiece to grip said workpiece between said first and second portions, one of said first and second portions being selectively movable to engage or disengage the workpiece from the effector.

13. (Original) The transport unit according to claim 12, wherein said first and second portions include retaining portions which overlie of the workpiece opposite a supporting surface of said end effector.

14. (Currently Amended) The transport unit according to claim 46, wherein said arm member includes:

- a first section extending from said vertical member;
- a second section extending from said first section, said second section rotationally connected to said first section, said second section carrying said first rotary actuator and said end effector; and
- a second rotary actuator having a first portion connected to said first section and a second portion connected to said second section, and a rotary power source for rotating said first portion with respect to said second portion.

15. (~~C~~ancelled)

16. (~~C~~ancelled)

17. (~~C~~ancelled)

18. (~~C~~ancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26 (Cancelled)

27 (Cancelled)

28 (Cancelled)

29 (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Currently Amended) A transport unit for handling a microelectronic workpiece, comprising:

- a support structure having a guide member configured to be slidably attached to an elongated track;
- a shaft member carried by the support structure at an angle to the elongated track, wherein the shaft member is coupled to a linear actuator to move the shaft member along a linear elevation path relative to the elongated track;
- an arm member carried by the shaft member, the arm member projecting from the shaft member;
- an edge-grip end-effector coupled to the arm member, the end-effector being configured to releasably engage only an edge~~a peripheral~~ portion of the microelectronic workpiece;
- a first rotational actuator operatively coupled to the end-effector to rotate the end-effector about a generally horizontal axis in a manner that moves the workpiece between a face-up position and a face-down position; and
- a second rotational actuator operatively coupled to at least one of the shaft member and/or the arm member to rotate the arm member about a first axis that is generally in the direction of the elevation path.

36. (Original) The transport unit of claim 35, wherein the end-effector comprises a paddle having pins arranged in a circular pattern to contact an edge portion of the workpiece, and wherein the pins have a top flange and an inclined lower portion that define a groove to receive the edge portion of the workpiece.

37.  (Cancelled)

38.  (Cancelled)

39. (Original) The transport unit of claim 35, wherein the support structure comprises a housing, the shaft member comprises a vertical member, and the arm

member comprises a first arm section coupled to the vertical member and a second arm section coupled to the first arm section.

40. (Cancelled)

41. (Cancelled)

42. (Cancelled)

43. (Cancelled)

44. (Cancelled)

45. (Cancelled)

46. (Cancelled)

47. (Cancelled)

48. (Cancelled)

49. (Cancelled)

50. (Cancelled)

51. (Cancelled)

52. (Cancelled)

53. (Cancelled)